School of
Multidisciplinary Studies

מכון טכנולוגי חולון
Holon Institute of Technology

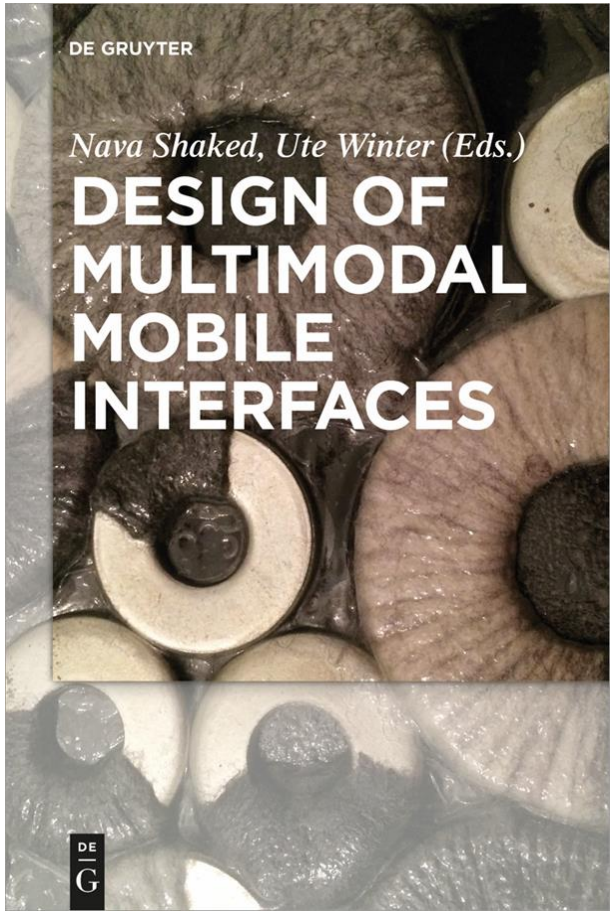
Conversational Interaction: A new look at HMI

Dr. Nava Shaked, HIT, Israel

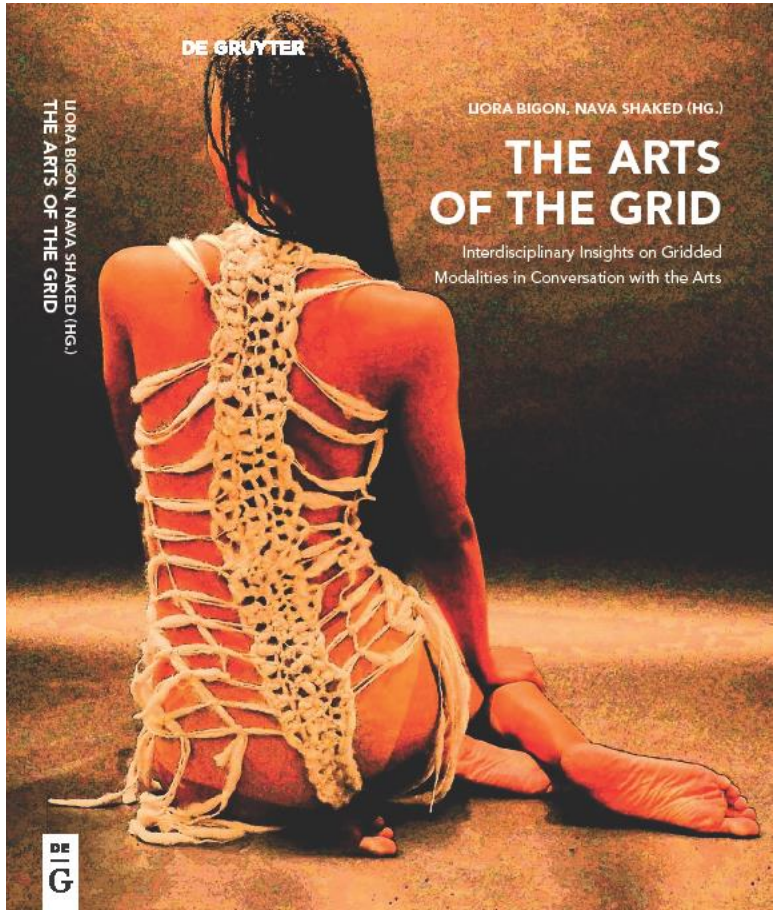
International Symposium on
Ambient Intelligence and Embedded Systems

AmiEs-2022

2016

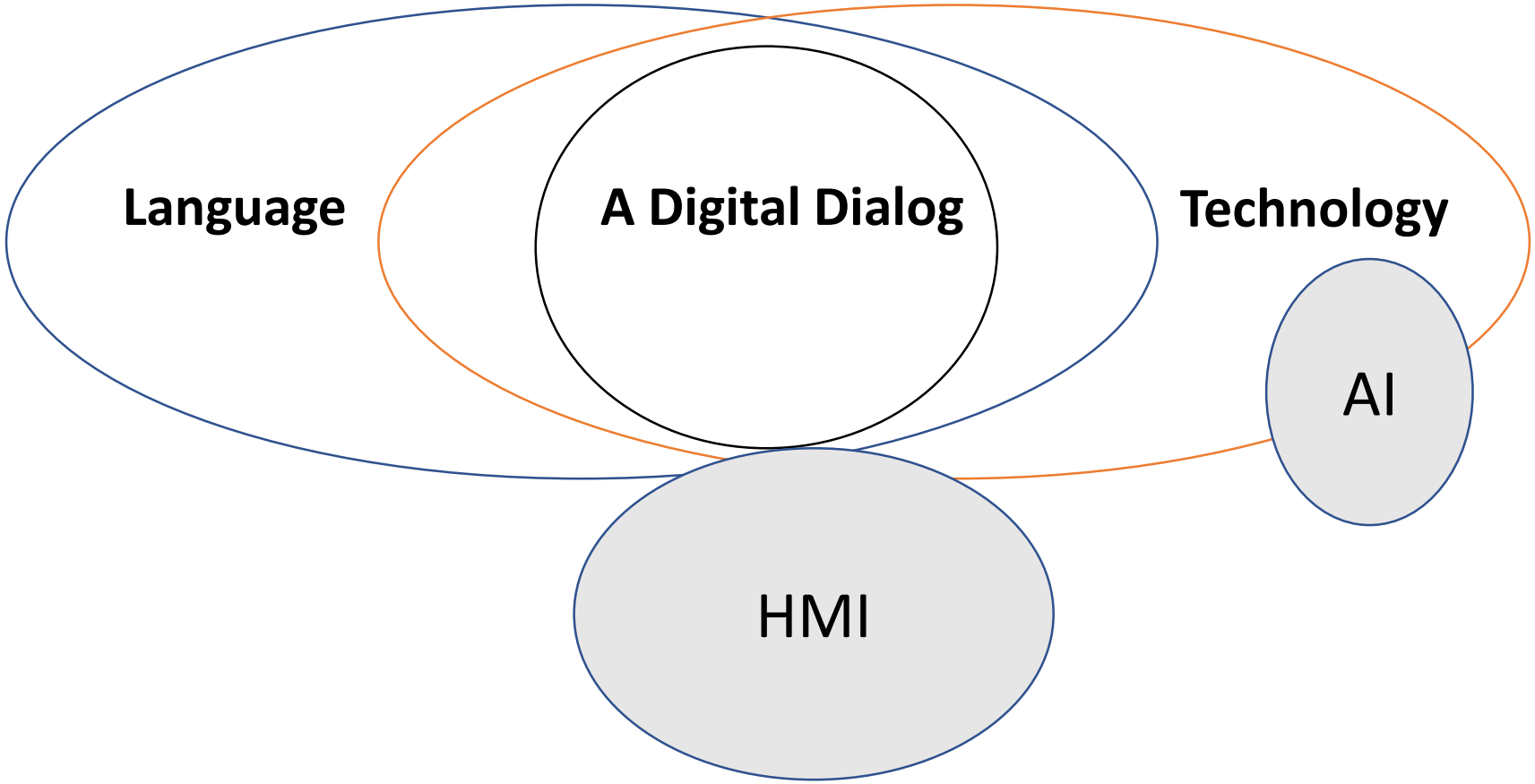

DE GRUYTER
Nava Shaked, Ute Winter (Eds.)
DESIGN OF MULTIMODAL MOBILE INTERFACES

2021


DE GRUYTER
LIORA BIGON, NAVA SHAKED (HG.)
THE ARTS OF THE GRID
Interdisciplinary Insights on Gridded Modalities in Conversation with the Arts
LIORA BIGON, NAVA SHAKED (HG.)
THE ARTS OF THE GRID

The digital Era

The Dialog as a Grid



Digital Dialog - a fusion Grids

"Language has no independent existence apart from the people who use it. It is not an end in itself; it is a means to an end of understanding who you are and what society is like."

David Crystal

“The digital dialog”

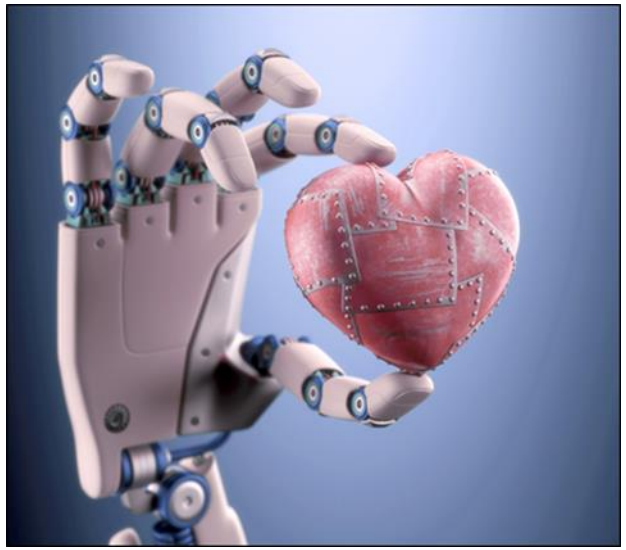
1. Face to Face (FTF) dialog,
2. Computer Meditated Communication (CMC).
3. Human Machine Interaction (HMI)

New - “the digital dialog” which refers to the way we interact in the different levels of the technological grid (avatars, PA , IM, Social Media, Gaming)

Face to Face Dialog (FTF)

- Understand me and my needs
- Be empathetic
- Build Trust
- Structures Dialog
- UX – Personalization, Customization
- Closeness, caring, responsibility ....

Computer Meditated Communication (CMC).



Any human communication that occurs through the use of two or more electronic devices.

Time Line for IM platforms

1996	2003	2004	2006	2009	2010	2011	2013	2021
ICQ	skype	Gmail, Facebook	Twitter	WhatsApp	Instagram, Viber	WeChat	Telegram	Signal

A word about globalization of digital language

- ✓ The effect of English on Multilanguage
- ✓ The use of emoji & memes– what's the story?

Example: Emoji palette

Human Machine Interaction (HMI)

Human

Machine

Task

Social Robots

Plymouth

AIBO

Jibo

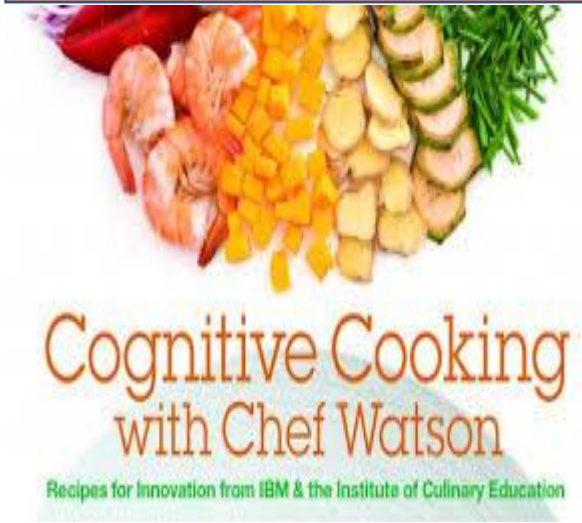
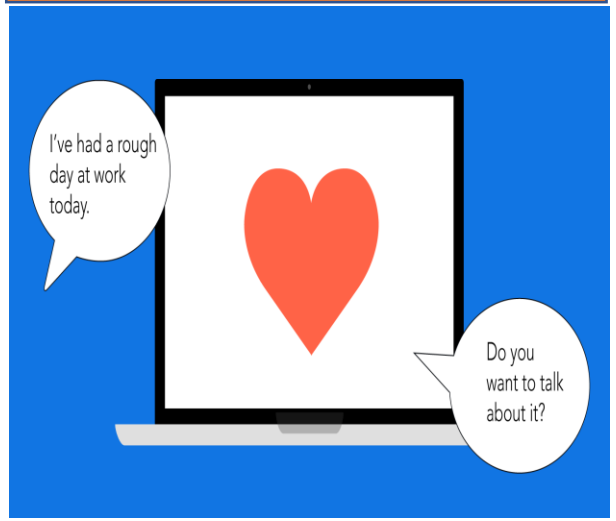
Misty II

Pepper

Gerijoy

Types of Interactive Virtual Dialog

Qualities / Type of VA	Visual – Personification	Voice enabled	Text enable	ML based Dialog	Simple/min interaction	Personalization options	3rd party agent	Multimodal /Effective interaction
Service Bot		V	V		V		V	
Chat Bot			V		V			
Virtual assistance		V	V	V		V	V	
Personal Assistance		V		V		V		
Conversational Agent		V		V		V		V
Virtual Agent							V	
Avatar	V	V		V		V		V
Humanoid	V	V		V		V		V

COMPUTING	COGNITIVE COMPUTING	Creative/ Predictive Computing	AFFECTIVE COMPUTING
			

The Evolution

Types of AI

Narrow AI	General AI	Generative AI	Edge AI
Google Duplex, Bots	Watson Debater, BERT model	GTP3, DALL·E 2 Chef Watson	smart utility grid streaming video optimization, and drone management.

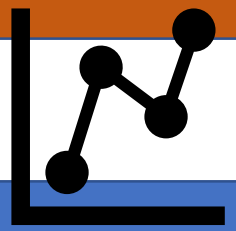
Hera

The First Avatar
For Pregnant Women

Choose your Hera

System Functionality

Informative



Food
Test
Names
Normal?

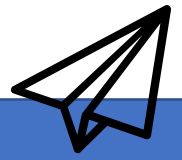
Assistance

Appointments
Docs
Images

Emotional

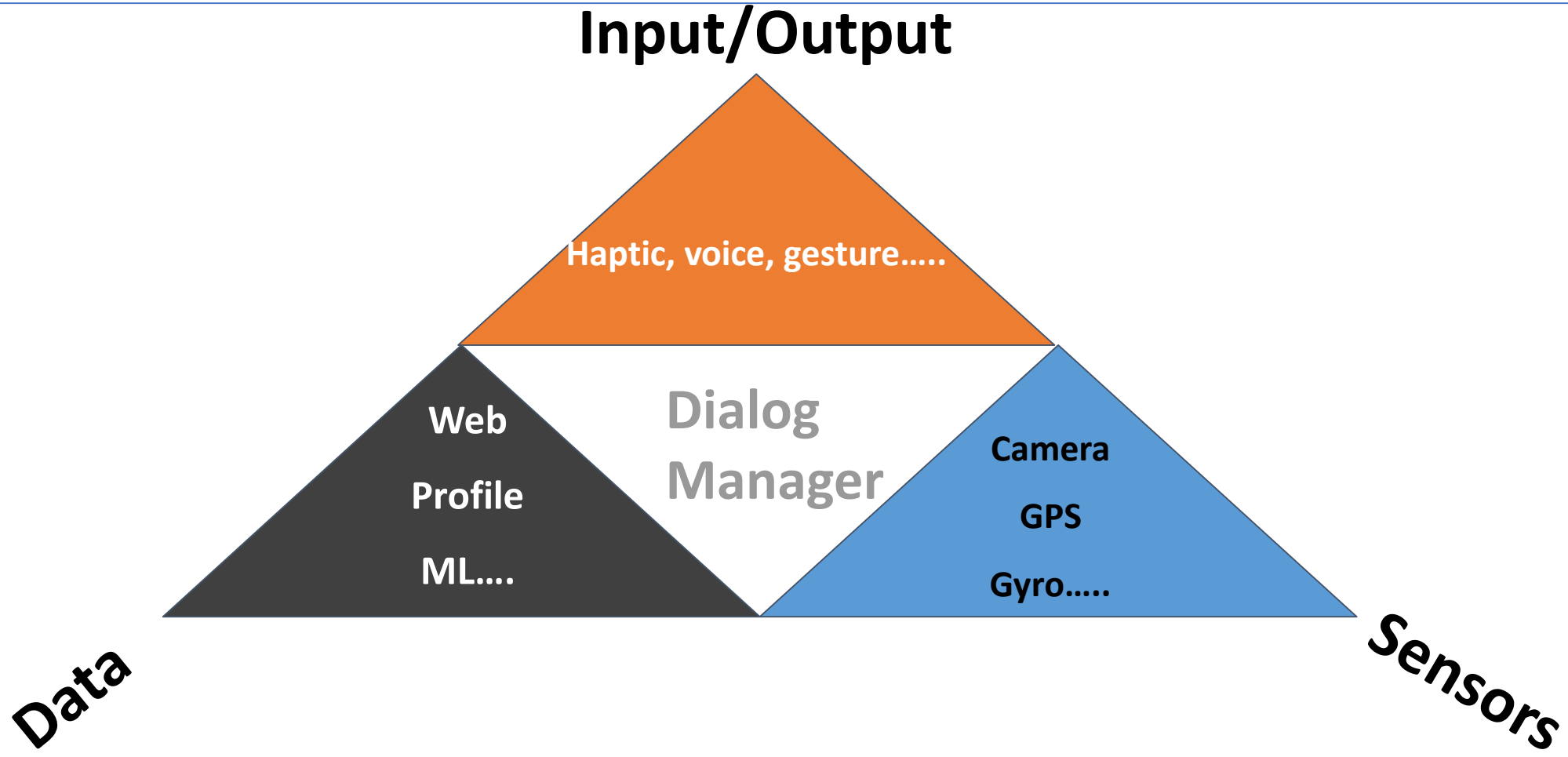
Food
Test
Names
Normal?

Social Media



Sharing is
caring

Multimodality- Interface Definition



The Multimodality Triangle

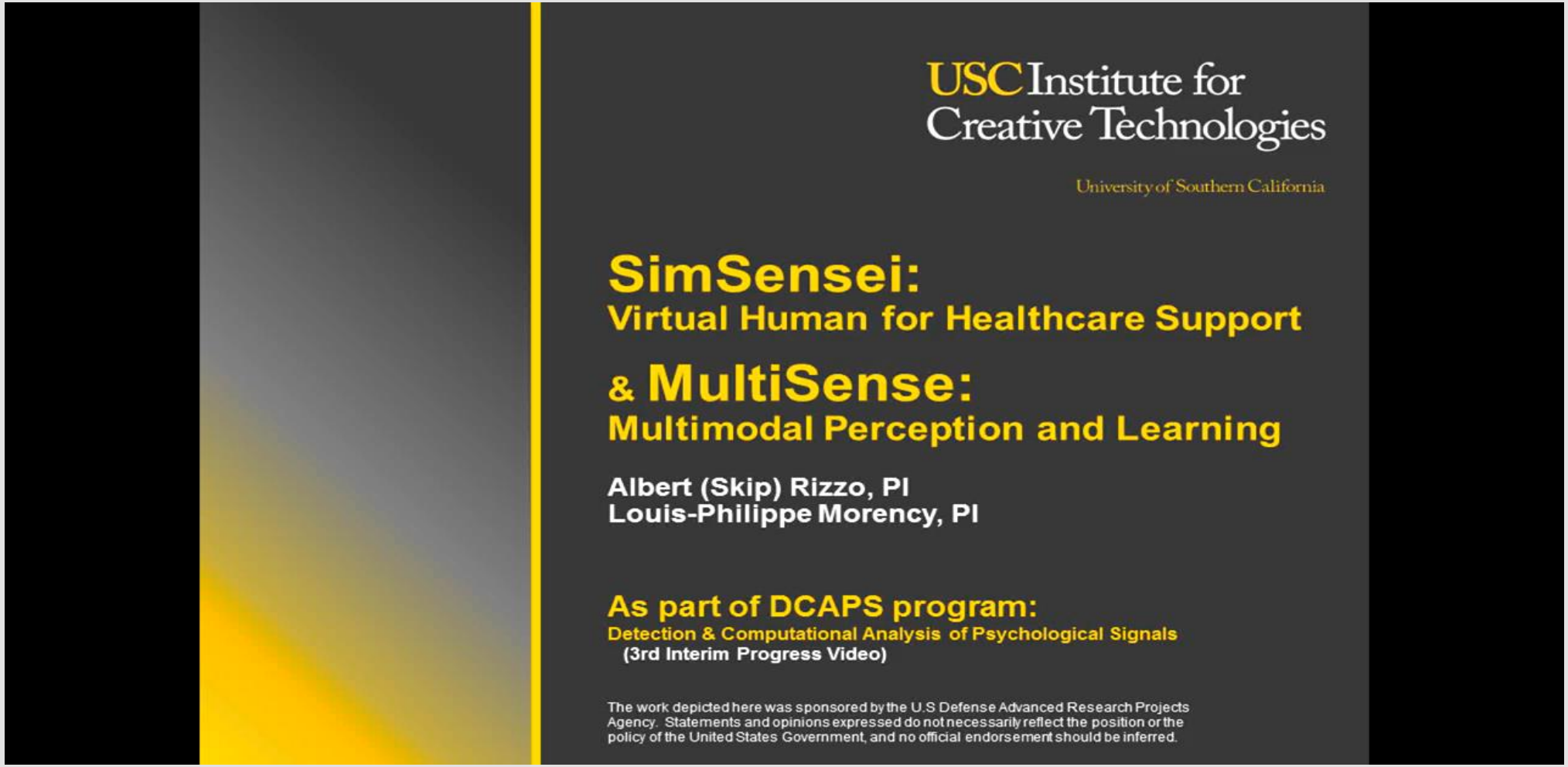
- **Sensors:**
- Camera, Gyro, Clock, GPS, Mic, Accelometer, etc

- **I/O Technologies**
- Speech, Type, Touch
- Biometrics, Gesture
- Eye tracking
- Face & lip movement
- Image processing

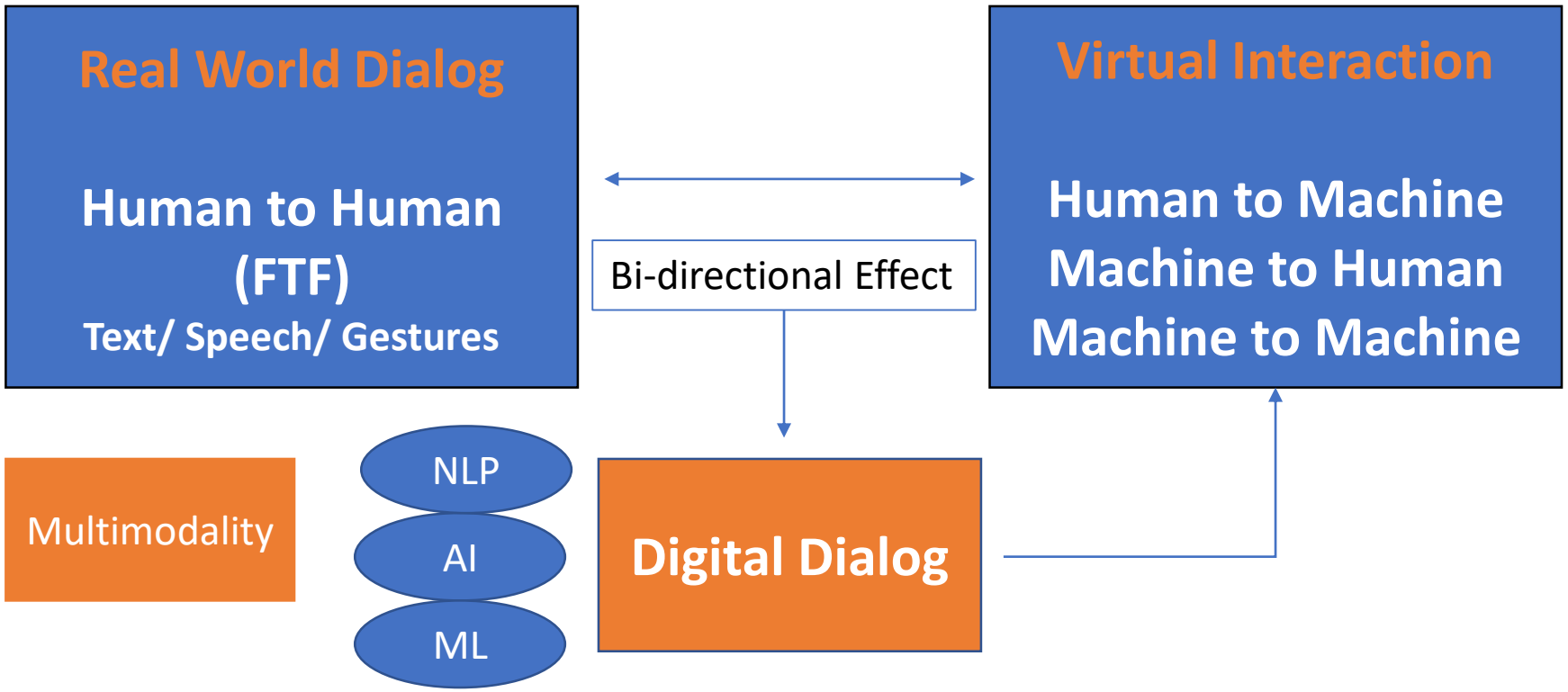
Using Context sensitive information

- Data bases & Statistics
- Personalization
- Behavior patterns
- Trends and predications
- Offering

SimSensei- interactive virtual agent-based clinical decision support tool and



The fusion of Grids



Dank u

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shakedn@hit.ac.il